## NAME

cluster − find clusters in a graph and augment the graph with this information.

## SYNOPSIS

**cluster** [**−v?**] [ **−C***k* ] [ **−c***k* ] [ **−o** *outfile* ] [ *files* ]

## DESCRIPTION

**cluster** takes as input a graph in DOT format, finds node clusters and augments the graph with this information. The clusters are specified by the "cluster" attribute attached to nodes; cluster values are non-negative integers. **cluster** attempts to maximize the modularity of the clustering. If the edge attribute "weight" is defined, this will be used in computing the clustering.

## OPTIONS

The following options are supported:

**−C***k* specifies a targeted number of clusters that should be generated. The specified number *k* is only a suggestion and may not be realisable. If *k == 0*, the default, the number of clusters that approximately optimizes the modularity is returned.

**−c***k* specifies clustering method. If *k == 0*, the default, modularity clustering will be used. If *k == 1* modularity quality will be used.

**−o***outfile*
Specifies that output should go into the file *outfile*. By default, *stdout* is used.

**−v** Verbose mode.

## EXAMPLES

Applying **cluster** to the following graph,

```
graph {
  1--2 [weight=10.]
  2--3 [weight=1]
  3--4 [weight=10.]
  4--5 [weight=10]
  5--6 [weight=10]
  3--6 [weight=0.1]
  4--6 [weight=10.]
 }
```

gives

```
graph {
   node [cluster="-1"];
   1 [cluster=1];
   2 [cluster=1];
   3 [cluster=2];
   4 [cluster=2];
   5 [cluster=2];
   6 [cluster=2];
   1 -- 2 [weight="10."];
   2 -- 3 [weight=1];
   3 -- 4 [weight="10."];
   4 -- 5 [weight=10];
   5 -- 6 [weight=10];
   3 -- 6 [weight="0.1"];
   4 -- 6 [weight="10."];
}
```

## AUTHOR

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## SEE ALSO

gvmap(1)

Blondel, V.D., Guillaume, J.L., Lambiotte, R., Lefebvre, E.: Fast unfolding of communities in large networks. Journal of Statistical Mechanics: Theory and Experiment (2008), P10008.